WHAT IS CLAIMED IS:

1. An oligomeric compound comprising a plurality of covalently-bound nucleosides said oligomeric compound having an internal region of Rp chiral phosphorothioate linked 2'-deoxynucleosides and two external regions flanking said internal region wherein said external regions impart nuclease resistance to said oligomeric compound.

2. The oligomeric compound of claim 1 wherein at least one nucleoside in the external regions comprises a substituent group.

3. The oligomeric compound of claim 2 wherein at least one nucleoside in each of the external regions comprises a substituent group.

3. The oligomeric compound of claim 2 wherein each nucleoside in the external regions comprises a substituent group.

4. The oligomeric compound of claim 2 wherein each of said substituent groups is covalently bound to the 5', 3' or 2'-position of the sugar moiety of said nucleoside.

5. The oligomeric compound of claim 4 wherein each of said substituent groups is covalently attached to said nucleoside at the 2'-position.

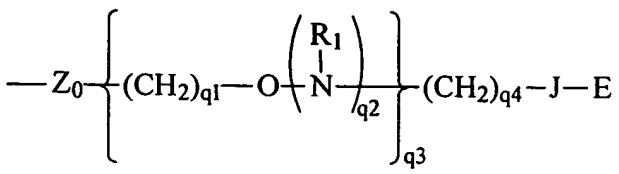
6. The oligomeric compound of claim 4 wherein each of said substituent groups is covalently attached to said nucleoside at the 5'-position.

7. The oligomeric compound of claim 1 wherein the ribosyl sugar moiety of at least one of said covalently-bound nucleosides in each of said external regions has the L-ribose configuration.

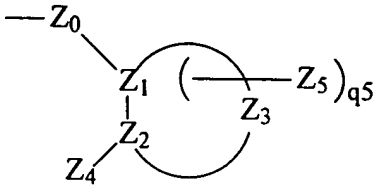
8. The oligomeric compound of claim 7 wherein the 5' and 3'-terminal ribosyl sugar moieties of said covalently-bound nucleosides each have the L-ribose configuration.

9. The oligomeric compound of claim 2 wherein each of said substituent groups is, independently, C_1-C_{20} alkyl, C_2-C_{20} alkenyl, C_2-C_{20} alkynyl, C_5-C_{20} aryl, O-alkyl, O-alkenyl, O-alkynyl, O-alkylamino, O-alkylalkoxy, O-alkylaminoalkyl, O-alkyl imidazole, thiol, S-alkyl, S-alkenyl, S-alkynyl, NH-alkyl, NH-alkenyl, NH-alkynyl, N-dialkyl, O-aryl, S-aryl, NH-aryl, O-aralkyl, S-aralkyl, NH-aralkyl, N-phthalimido, halogen, keto, carboxyl, nitro, nitroso, nitrile, trifluoromethyl, trifluoromethoxy, imidazole, azido, hydrazino, hydroxylamino, isocyanato, sulfoxide, sulfone, sulfide, disulfide, silyl, heterocycle, carbocycle, polyamine, polyamide, polyalkylene glycol, and polyether;

or each substituent group has one of formula I or II:



I



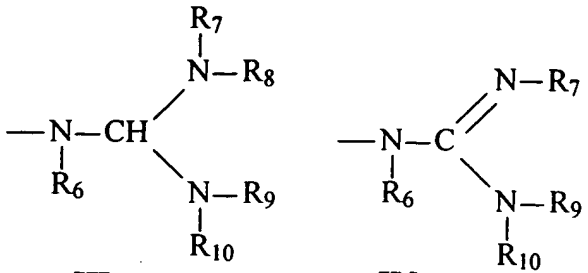
II

wherein:

Z_0 is O, S or NH;

J is a single bond, O or C(=O);

E is C_1-C_{10} alkyl, $N(R_1)(R_2)$, $N(R_1)(R_5)$, $N=C(R_1)(R_2)$, $N=C(R_1)(R_5)$ or has one of formula III or IV;



III IV

each R_6, R_7, R_8, R_9 and R_{10} is, independently, hydrogen, $C(O)R_{11}$, substituted or unsubstituted C_1-C_{10} alkyl, substituted or unsubstituted C_2-C_{10} alkenyl, substituted or unsubstituted C_2-C_{10} alkynyl, alkylsulfonyl, arylsulfonyl, a chemical functional group or a conjugate group, wherein the substituent groups are selected from hydroxyl, amino, alkoxy, carboxy, benzyl, phenyl, nitro, thiol, thioalkoxy, halogen, alkyl, aryl, alkenyl and alkynyl;

or optionally, R_7 and R_8, together form a phthalimido moiety with the nitrogen atom to which they are attached;

or optionally, R_9 and R_{10}, together form a phthalimido moiety with the nitrogen atom to which they are attached;

each R_{11} is, independently, substituted or unsubstituted C_1-C_{10} alkyl, trifluoromethyl, cyanoethyloxy, methoxy, ethoxy, t-butoxy, allyloxy, 9-fluorenylmethoxy, 2-(trimethylsilyl)-ethoxy, 2,2,2-trichloroethoxy, benzyloxy, butyryl, iso-butyryl, phenyl or aryl;

R_5 is T-L,

T is a bond or a linking moiety;

L is a chemical functional group, a conjugate group or a solid support material;

each R_1 and R_2 is, independently, H, a nitrogen protecting group, substituted or unsubstituted C_1-C_{10} alkyl, substituted or unsubstituted C_2-C_{10} alkenyl, substituted or unsubstituted C_2-C_{10} alkynyl, wherein said substitution is OR_3, SR_3, NH_3^+, $N(R_3)(R_4)$, guanidino or acyl where said acyl is an acid amide or an ester;

or R_1 and R_2, together, are a nitrogen protecting group or are joined in a ring structure that optionally includes an additional heteroatom selected from N and O;

or R_1, T and L, together, are a chemical functional group;

each R_3 and R_4 is, independently, H, C_1-C_{10} alkyl, a nitrogen protecting group, or R_3 and R_4, together, are a nitrogen protecting group;

or R_3 and R_4 are joined in a ring structure that optionally includes an additional heteroatom selected from N and O;

Z_4 is OX, SX, or $N(X)_2$;

each X is, independently, H, C_1-C_8 alkyl, C_1-C_8 haloalkyl, $C(=NH)N(H)R_5$, $C(=O)N(H)R_5$ or $OC(=O)N(H)R_5$;

R_5 is H or C_1-C_8 alkyl;

Z_1, Z_2 and Z_3 comprise a ring system having from about 4 to about 7 carbon atoms or having from about 3 to about 6 carbon atoms and 1 or 2 hetero atoms wherein said hetero atoms are selected from oxygen, nitrogen and sulfur and wherein said ring system is aliphatic, unsaturated aliphatic, aromatic, or saturated or unsaturated heterocyclic;

Z_5 is alkyl or haloalkyl having 1 to about 10 carbon atoms, alkenyl having 2 to about 10 carbon atoms, alkynyl having 2 to about 10 carbon atoms, aryl having 6 to about 14 carbon atoms, $N(R_1)(R_2)$ OR_1, halo, SR_1 or CN;

each q_1 is, independently, an integer from 1 to 10;

each q_2 is, independently, 0 or 1;

q_3 is 0 or an integer from 1 to 10;

q_4 is an integer from 1 to 10;

q_5 is from 0, 1 or 2; and

provided that when q_3 is 0, q_4 is greater than 1.

10. The oligomeric compound of claim 9 wherein said substituent group has formula I, II, III or IV.

11. The oligomeric compound of claim 1 wherein at least one internucleoside linkage in one of said external regions is modified.

12. The oligomeric compound of claim 11 wherein at least one internucleoside linkage in each of said external regions is modified.

13. The oligomeric compound of claim 11 wherein each of the internucleoside linkages in said external regions are modified.

14. The oligomeric compound of claim 11 wherein each modified internucleoside linkage is, independently, methyl phosphonate, boranophosphonate, phosphoramidate, 3'-methylenephosphonate or methylene(methylimino).

15. The oligomeric compound of claim 1 wherein at least one internucleoside linkage in one of said external regions is a 2', 5'-internucleoside linkage.

16. The oligomeric compound of claim 15 wherein at least one internucleoside linkage in each of said external regions is a 2', 5'-internucleoside linkage.

17. The oligomeric compound of claim 1 comprising from 5 to about 50 nucleosides.

18. The oligomeric compound of claim 1 comprising from 8 to about 30 nucleosides.

19. The oligomeric compound of claim 1 comprising from 15 to about 25 nucleosides.

20. The oligomeric compound of claim 1 wherein each of the external regions comprises from 1 to 6 nucleosides.

21. The oligomeric compound of claim 1 wherein each of the external regions comprise from 1 to 3 nucleosides.

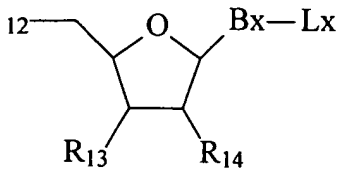
22. A pharmaceutical composition comprising a compound of claim 1 and an acceptable pharmaceutical carrier.

23. An oligomeric compound of the formula:

$$5'\text{-}(Nu_1\text{-}L_1)_n\text{-}Y\text{-}(L_2\text{-}Nu_2)_p\text{-}3'$$

wherein:

each Nu_1 and Nu_2, independently, has the formula:



wherein

Bx is a heterocyclic base moiety;

Lx is hydrogen, a protecting group or a substituent group;

one of R_{12}, R_{13} and R_{14} is hydroxyl, a protected hydroxyl, a covalent attachment to a solid support, a nucleoside, an oligonucleoside, a nucleotide, an oligonucleotide, a conjugate group or an optionally protected substituent group;

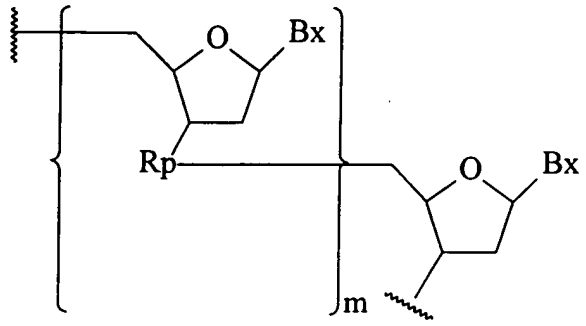
another of R_{12}, R_{13} and R_{14} is hydrogen, hydroxyl, a protected hydroxyl or an optionally protected substituent group;

the remaining of R_{12}, R_{13} and R_{14}, of Nu_1, is L_1;

the remaining of R_{12}, R_{13} and R_{14}, of Nu_2, is L_2;

each L_1 and each L_2 is, independently, a phosphodiester internucleoside linkage or a modified internucleoside linkage;

Y has the formula:



wherein:

each Rp is a chiral Rp phosphorothioate internucleotide linkage; and

each n, m and p is, independently, from 1 to 100; where the sum of n, m and p is from 3 to about 200;

with the proviso that at least one of R_{12}, R_{13}, R_{14} and Lx is a substituent group or at least one of L_1 and L_2 is a modified internucleoside linkage.

24. The oligomeric compound of claim 23 wherein at least one Nu_1 or at least one Nu_2 comprises a substituent group.

25. The oligomeric compound of claim 24 wherein at least one Nu_1 and at least one Nu_2 independently comprise a substituent group.

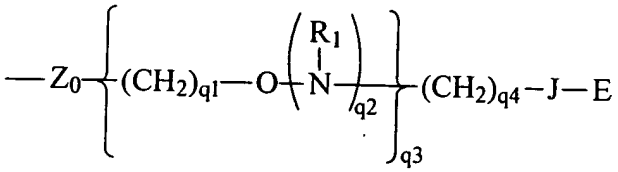
26. The oligomeric compound of claim 23 wherein each Nu_1 and each Nu_2 independently comprises a substituent group.

27. The oligomeric compound of claim 24 wherein said substituent group is covalently attached to the 2', 3' or 5'-position of said Nu_1 or Nu_2.

28. The oligomeric compound of claim 27 wherein said substituent group is covalently attached to the 2'-position of said Nu_1 or Nu_2.

29. The oligomeric compound of claim 23 wherein each of said substituent groups is, independently, C_1-C_{20} alkyl, C_2-C_{20} alkenyl, C_2-C_{20} alkynyl, C_5-C_{20} aryl, O-alkyl, O-alkenyl, O-alkynyl, O-alkylamino, O-alkylalkoxy, O-alkylaminoalkyl, O-alkyl imidazole, thiol, S-alkyl, S-alkenyl, S-alkynyl, NH-alkyl, NH-alkenyl, NH-alkynyl, N-dialkyl, O-aryl, S-aryl, NH-aryl, O-aralkyl, S-aralkyl, NH-aralkyl, N-phthalimido, halogen keto, carboxyl, nitro, nitroso, nitrile, trifluoromethyl, trifluoromethoxy, imidazole, azido, hydrazino, hydroxylamino, isocyanato, sulfoxide, sulfone, sulfide, disulfide, silyl, heterocycle, carbocycle, polyamine, polyamide, polyalkylene glycol, and polyether;

or each substituent group has one of formula I or II:



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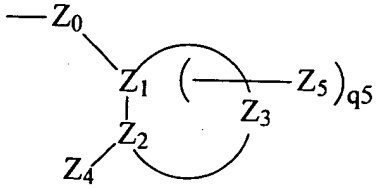


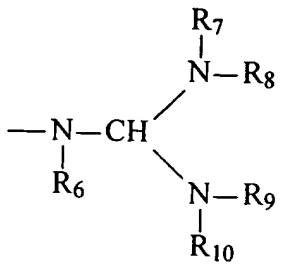
II

wherein:

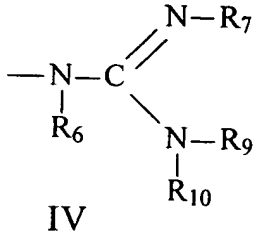
Z_0 is O, S or NH;

J is a single bond, C or C(=O);

E is C_1-C_{10} alkyl, $N(R_1)(R_2)$, $N(R_1)(R_5)$, $N=C(R_1)(R_2)$, $N=C(R_1)(R_5)$ or has one of formula III or IV;



III



IV

each R_6, R_7, R_8, R_9 and R_{10} is, independently, hydrogen, $C(O)R_{11}$, substituted or unsubstituted C_1-C_{10} alkyl, substituted or unsubstituted C_2-C_{10} alkenyl, substituted or unsubstituted

C_2-C_{10} alkynyl, alkylsulfonyl, arylsulfonyl, a chemical functional group or a conjugate group, wherein the substituent groups are selected from hydroxyl, amino, alkoxy, carboxy, benzyl, phenyl, nitro, thiol, thioalkoxy, halogen, alkyl, aryl, alkenyl and alkynyl;

or optionally, R_7 and R_8, together form a phthalimido moiety with the nitrogen atom to which they are attached;

or optionally, R_9 and R_{10}, together form a phthalimido moiety with the nitrogen atom to which they are attached;

each R_{11} is, independently, substituted or unsubstituted C_1-C_{10} alkyl, trifluoromethyl, cyanoethyloxy, methoxy, ethoxy, t-butoxy, allyloxy, 9-fluorenylmethoxy, 2-(trimethylsilyl)-ethoxy, 2,2,2-trichloroethoxy, benzyloxy, butyryl, iso-butyryl, phenyl or aryl;

R_5 is T-L,

T is a bond or a linking moiety;

L is a chemical functional group, a conjugate group or a solid support material;

each R_1 and R_2 is, independently, H, a nitrogen protecting group, substituted or unsubstituted C_1-C_{10} alkyl, substituted or unsubstituted C_2-C_{10} alkenyl, substituted or unsubstituted C_2-C_{10} alkynyl, wherein said substitution is OR_3, SR_3, NH_3^+, $N(R_3)(R_4)$, guanidino or acyl where said acyl is an acid amide or an ester;

or R_1 and R_2, together, are a nitrogen protecting group or are joined in a ring structure that optionally includes an additional heteroatom selected from N and O;

or R_1, T and L, together, are a chemical functional group;

each R_3 and R_4 is, independently, H, C_1-C_{10} alkyl, a nitrogen protecting group, or R_3 and R_4, together, are a nitrogen protecting group;

or R_3 and R_4 are joined in a ring structure that optionally includes an additional heteroatom selected from N and O;

Z_4 is OX, SX, or $N(X)_2$;

each X is, independently, H, C_1-C_8 alkyl, C_1-C_8 haloalkyl, $C(=NH)N(H)R_5$, $C(=O)N(H)R_5$ or $OC(=O)N(H)R_5$;

R_5 is H or C_1-C_8 alkyl;

Z_1, Z_2 and Z_3 comprise a ring system having from about 4 to about 7 carbon atoms or having from about 3 to about 6 carbon atoms and 1 or 2 hetero atoms wherein said hetero atoms are selected from oxygen, nitrogen and sulfur and wherein said ring system is aliphatic, unsaturated aliphatic, aromatic, or saturated or unsaturated heterocyclic;

Z_5 is alkyl or haloalkyl having 1 to about 10 carbon atoms, alkenyl having 2 to about 10 carbon atoms, alkynyl having 2 to about 10 carbon atoms, aryl having 6 to about 14 carbon atoms, $N(R_1)(R_2)$ OR_1, halo, SR_1 or CN;

each q_1 is, independently, an integer from 1 to 10;

each q_2 is, independently, 0 or 1;

q_3 is 0 or an integer from 1 to 10;

q_4 is an integer from 1 to 10;

q_5 is from 0, 1 or 2; and

provided that when q_3 is 0, q_4 is greater than 1.

30. The oligomeric compound of claim 23 wherein at least one of L_1 and L_2 is a modified internucleoside linkage.

31. The oligomeric compound of claim 30 wherein at least one of L_1 and at least one of L_2 is a modified internucleoside linkage.

32. The oligomeric compound of claim 30 wherein each L_1 and L_2 is a phosphodiester internucleoside linkage.

33. The oligomeric compound of claim 30 wherein each modified internucleoside linkage is, phosphorodithioate; chiral Sp phosphorothioate; phosphoramidate; thiophosphor-

amidate; phosphonate; methylene phosphonate; phosphotriesters; thionoalkylphosphonate; thionoalkylphosphotriester; boranophosphate; boranothiophosphate; thiodiester; thionocarbamate; siloxane; carbamate; sulfamate; morpholino sulfamide; sulfonamide; sulfide; sulfonate; N,N'-dimethylhydrazine; thioformacetal; formacetal; thioketal; ketal; amine (-NH-CH_2-CH_2-); hydroxylamine; hydroxylimine; hydrazinyl; amide (-CH_2-N(JJ)-C(O)-) and (-CH_2-C(O)-N(JJ)-); oxime (-CH_2-O-N=CH-); and alkylphosphorus (-$C(JJ)_2$-P(=O)(OJJ)-$C(JJ)_2$-$C(JJ)_2$-), wherein J is hydrogen or C_1 to C_{10} alkyl.

34. The oligomeric compound of claim 30 wherein each modified internucleoside linkage is, independently, methyl phosphonate, boranophosphonate, phosphoramidate, 3'-methylenephosphonate or methylene(methylimino).

35. The oligomeric compound of claim 23 wherein at least one R_{14} is L_1 or L_2.

36. The oligomeric compound of claim 23 wherein at least one R_{14} is L_1 and at least one R_{14} is L_2.

37. The oligomeric compound of claim 23 comprising from 5 to about 50 nucleosides.

38. The oligomeric compound of claim 23 comprising from 8 to about 30 nucleosides.

39. The oligomeric compound of claim 23 comprising from 15 to about 25 nucleosides.

40. The oligomeric compound of claim 23 wherein the sum of n and p is from 2 to about 12.

41. The oligomeric compound of claim 23 wherein the sum of n and p is from 2 to about 6.

42. The oligomeric compound of claim 23 wherein the sum of n and p is from 2 to 4.

43. A pharmaceutical composition comprising a compound of claim 1 and an acceptable pharmaceutical carrier.

WHAT IS CLAIMED IS:

1. An oligomeric compound comprising a plurality of covalently-bound nucleosides said oligomeric compound having an internal region of Rp chiral phosphorothioate linked 2'-deoxynucleosides and two external regions flanking said internal region wherein said external regions impart nuclease resistance to said oligomeric compound.

2. The oligomeric compound of claim 1 wherein at least one nucleoside in the external regions comprises a substituent group.

3. The oligomeric compound of claim 2 wherein at least one nucleoside in each of the external regions comprises a substituent group.

~~3. The oligomeric compound of claim 2 wherein each nucleoside in the external regions comprises a substituent group.~~

4. The oligomeric compound of claim 2 wherein each of said substituent groups is covalently bound to the 5', 3' or 2'-position of the sugar moiety of said nucleoside.

5. The oligomeric compound of claim 4 wherein each of said substituent groups is covalently attached to said nucleoside at the 2'-position.

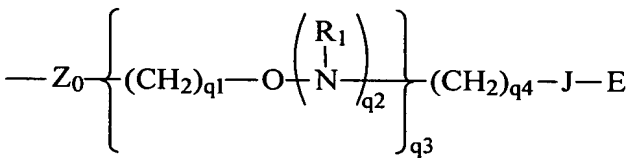
6. The oligomeric compound of claim 4 wherein each of said substituent groups is covalently attached to said nucleoside at the 5'-position.

7. The oligomeric compound of claim 1 wherein the ribosyl sugar moiety of at least one of said covalently-bound nucleosides in each of said external regions has the L-ribose configuration.

8. The oligomeric compound of claim 7 wherein the 5' and 3'-terminal ribosyl sugar moieties of said covalently-bound nucleosides each have the L-ribose configuration.

9. The oligomeric compound of claim 2 wherein each of said substituent groups is, independently, C_1-C_{20} alkyl, C_2-C_{20} alkenyl, C_2-C_{20} alkynyl, C_5-C_{20} aryl, O-alkyl, O-alkenyl, O-alkynyl, O-alkylamino, O-alkylalkoxy, O-alkylaminoalkyl, O-alkyl imidazole, thiol, S-alkyl, S-alkenyl, S-alkynyl, NH-alkyl, NH-alkenyl, NH-alkynyl, N-dialkyl, O-aryl, S-aryl, NH-aryl, O-aralkyl, S-aralkyl, NH-aralkyl, N-phthalimido, halogen keto, carboxyl, nitro, nitroso, nitrile, trifluoromethyl, trifluoromethoxy, imidazole, azido, hydrazino, hydroxylamino, isocyanato, sulfoxide, sulfone, sulfide, disulfide, silyl, heterocycle, carbocycle, polyamine, polyamide, polyalkylene glycol, and polyether;

or each substituent group has one of formula I or II:



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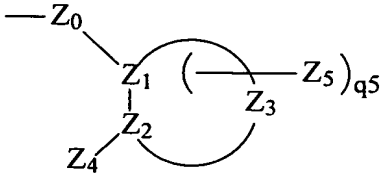


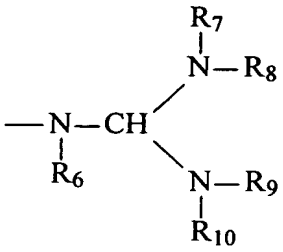
II

wherein:

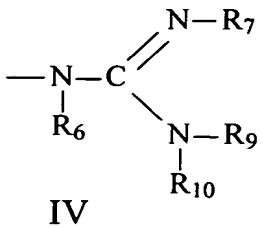
Z_0 is O, S or NH;

J is a single bond, O or C(=O);

E is C_1-C_{10} alkyl, $N(R_1)(R_2)$, $N(R_1)(R_5)$, $N=C(R_1)(R_2)$, $N=C(R_1)(R_5)$ or has one of formula III or IV;



III



IV

each R_6, R_7, R_8, R_9 and R_{10} is, independently, hydrogen, $C(O)R_{11}$, substituted or unsubstituted C_1-C_{10} alkyl, substituted or unsubstituted C_2-C_{10} alkenyl, substituted or unsubstituted C_2-C_{10} alkynyl, alkylsulfonyl, arylsulfonyl, a chemical functional group or a conjugate group, wherein the substituent groups are selected from hydroxyl, amino, alkoxy, carboxy, benzyl, phenyl, nitro, thiol, thioalkoxy, halogen, alkyl, aryl, alkenyl and alkynyl;

or optionally, R_7 and R_8, together form a phthalimido moiety with the nitrogen atom to which they are attached;

or optionally, R_9 and R_{10}, together form a phthalimido moiety with the nitrogen atom to which they are attached;

each R_{11} is, independently, substituted or unsubstituted C_1-C_{10} alkyl, trifluoromethyl, cyanoethyloxy, methoxy, ethoxy, t-butoxy, allyloxy, 9-fluorenylmethoxy, 2-(trimethylsilyl)-ethoxy, 2,2,2-trichloroethoxy, benzyloxy, butyryl, iso-butyryl, phenyl or aryl;

R_5 is T-L,

T is a bond or a linking moiety;

L is a chemical functional group, a conjugate group or a solid support material;

each R_1 and R_2 is, independently, H, a nitrogen protecting group, substituted or unsubstituted C_1-C_{10} alkyl, substituted or unsubstituted C_2-C_{10} alkenyl, substituted or unsubstituted C_2-C_{10} alkynyl, wherein said substitution is OR_3, SR_3, NH_3^+, $N(R_3)(R_4)$, guanidino or acyl where said acyl is an acid amide or an ester;

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or R_1 and R_2, together, are a nitrogen protecting group or are joined in a ring structure that optionally includes an additional heteroatom selected from N and O;

or R_1, T and L, together, are a chemical functional group;

each R_3 and R_4 is, independently, H, C_1-C_{10} alkyl, a nitrogen protecting group, or R_3 and R_4, together, are a nitrogen protecting group;

or R_3 and R_4 are joined in a ring structure that optionally includes an additional heteroatom selected from N and O;

Z_4 is OX, SX, or $N(X)_2$;

each X is, independently, H, C_1-C_8 alkyl, C_1-C_8 haloalkyl, $C(=NH)N(H)R_5$, $C(=O)N(H)R_5$ or $OC(=O)N(H)R_5$;

R_5 is H or C_1-C_8 alkyl;

Z_1, Z_2 and Z_3 comprise a ring system having from about 4 to about 7 carbon atoms or having from about 3 to about 6 carbon atoms and 1 or 2 hetero atoms wherein said hetero atoms are selected from oxygen, nitrogen and sulfur and wherein said ring system is aliphatic, unsaturated aliphatic, aromatic, or saturated or unsaturated heterocyclic;

Z_5 is alkyl or haloalkyl having 1 to about 10 carbon atoms, alkenyl having 2 to about 10 carbon atoms, alkynyl having 2 to about 10 carbon atoms, aryl having 6 to about 14 carbon atoms, $N(R_1)(R_2)$ OR_1, halo, SR_1 or CN;

each q_1 is, independently, an integer from 1 to 10;

each q_2 is, independently, 0 or 1;

q_3 is 0 or an integer from 1 to 10;

q_4 is an integer from 1 to 10;

q_5 is from 0, 1 or 2; and

provided that when q_3 is 0, q_4 is greater than 1.

10. The oligomeric compound of claim 9 wherein said substituent group has formula I, II, III or IV.

11. The oligomeric compound of claim 1 wherein at least one internucleoside linkage in one of said external regions is modified.

12. The oligomeric compound of claim 11 wherein at least one internucleoside linkage in each of said external regions is modified.

13. The oligomeric compound of claim 11 wherein each of the internucleoside linkages in said external regions are modified.

14. The oligomeric compound of claim 11 wherein each modified internucleoside linkage is, independently, methyl phosphonate, boranophosphonate, phosphoramidate, 3'-methylenephosphonate or methylene(methylimino).

15. The oligomeric compound of claim 1 wherein at least one internucleoside linkage in one of said external regions is a 2', 5'-internucleoside linkage.

16. The oligomeric compound of claim 15 wherein at least one internucleoside linkage in each of said external regions is a 2', 5'-internucleoside linkage.

17. The oligomeric compound of claim 1 comprising from 5 to about 50 nucleosides.

18. The oligomeric compound of claim 1 comprising from 8 to about 30 nucleosides.

19. The oligomeric compound of claim 1 comprising from 15 to about 25 nucleosides.

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20. The oligomeric compound of claim 1 wherein each of the external regions comprises from 1 to 6 nucleosides.

21. The oligomeric compound of claim 1 wherein each of the external regions comprise from 1 to 3 nucleosides.

22. A pharmaceutical composition comprising a compound of claim 1 and an acceptable pharmaceutical carrier.

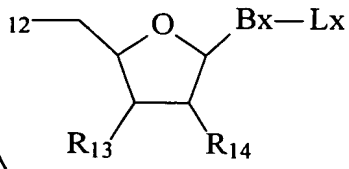
Subt A4

23. An oligomeric compound of the formula:

$$5'\text{-}(Nu_1\text{-}L_1)_n\text{-}Y\text{-}(L_2\text{-}Nu_2)_p\text{-}3'$$

wherein:

each Nu_1 and Nu_2, independently, has the formula:



wherein

Bx is a heterocyclic base moiety;

Lx is hydrogen, a protecting group or a substituent group;

one of R_{12}, R_{13} and R_{14} is hydroxyl, a protected hydroxyl, a covalent attachment to a solid support, a nucleoside, an oligonucleoside, a nucleotide, an oligonucleotide, a conjugate group or an optionally protected substituent group;

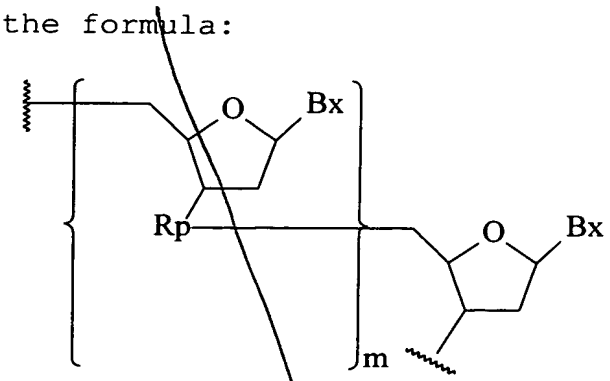
another of R_{12}, R_{13} and R_{14} is hydrogen, hydroxyl, a protected hydroxyl or an optionally protected substituent group;

the remaining of R_{12}, R_{13} and R_{14}, of Nu_1, is L_1;

the remaining of R_{12}, R_{13} and R_{14}, of Nu_2, is L_2;

each L_1 and each L_2 is, independently, a phosphodiester internucleoside linkage or a modified internucleoside linkage;

Y has the formula:



wherein:

each Rp is a chiral Rp phosphorothioate internucleotide linkage; and

each n, m and p is, independently, from 1 to 100; where the sum of n, m and p is from 3 to about 200;

with the proviso that at least one of R_{12}, R_{13}, R_{14} and Lx is a substituent group or at least one of L_1 and L_2 is a modified internucleoside linkage.

24. The oligomeric compound of claim 23 wherein at least one Nu_1 or at least one Nu_2 comprises a substituent group.

25. The oligomeric compound of claim 24 wherein at least one Nu_1 and at least one Nu_2 independently comprise a substituent group.

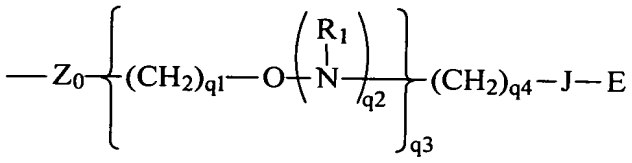
26. The oligomeric compound of claim 23 wherein each Nu_1 and each Nu_2 independently comprises a substituent group.

27. The oligomeric compound of claim 24 wherein said substituent group is covalently attached to the 2', 3' or 5'-position of said Nu_1 or Nu_2.

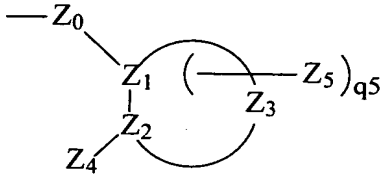
28. The oligomeric compound of claim 27 wherein said substituent group is covalently attached to the 2'-position of said Nu_1 or Nu_2.

29. The oligomeric compound of claim 23 wherein each of said substituent groups is, independently, C_1-C_{20} alkyl, C_2-C_{20} alkenyl, C_2-C_{20} alkynyl, C_5-C_{20} aryl, O-alkyl, O-alkenyl, O-alkynyl, O-alkylamino, O-alkylalkoxy, O-alkylaminoalkyl, O-alkyl imidazole, thiol, S-alkyl, S-alkenyl, S-alkynyl, NH-alkyl, NH-alkenyl, NH-alkynyl, N-dialkyl, O-aryl, S-aryl, NH-aryl, O-aralkyl, S-aralkyl, NH-aralkyl, N-phthalimido, halogen keto, carboxyl, nitro, nitroso, nitrile, trifluoromethyl, trifluoromethoxy, imidazole, azido, hydrazino, hydroxylamino, isocyanato, sulfoxide, sulfone, sulfide, disulfide, silyl, heterocycle, carbocycle, polyamine, polyamide, polyalkylene glycol, and polyether;

or each substituent group has one of formula I or II:



I



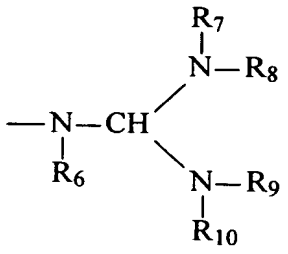
II

wherein:

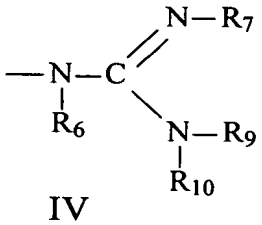
Z_0 is O, S or NH;

J is a single bond, C or C(=O);

E is C_1-C_{10} alkyl, $N(R_1)(R_2)$, $N(R_1)(R_5)$, $N=C(R_1)(R_2)$, $N=C(R_1)(R_5)$ or has one of formula III or IV;



III



IV

each R_6, R_7, R_8, R_9 and R_{10} is, independently, hydrogen, $C(O)R_{11}$, substituted or unsubstituted C_1-C_{10} alkyl, substituted or unsubstituted C_2-C_{10} alkenyl, substituted or unsubstituted

C_2-C_{10} alkynyl, alkylsulfonyl, arylsulfonyl, a chemical functional group or a conjugate group, wherein the substituent groups are selected from hydroxyl, amino, alkoxy, carboxy, benzyl, phenyl, nitro, thiol, thioalkoxy, halogen, alkyl, aryl, alkenyl and alkynyl;

or optionally, R_7 and R_8, together form a phthalimido moiety with the nitrogen atom to which they are attached;

or optionally, R_9 and R_{10}, together form a phthalimido moiety with the nitrogen atom to which they are attached;

each R_{11} is, independently, substituted or unsubstituted C_1-C_{10} alkyl, trifluoromethyl, cyanoethyloxy, methoxy, ethoxy, t-butoxy, allyloxy, 9-fluorenylmethoxy, 2-(trimethylsilyl)-ethoxy, 2,2,2-trichloroethoxy, benzyloxy, butyryl, iso-butyryl, phenyl or aryl;

R_5 is T-L,

T is a bond or a linking moiety;

L is a chemical functional group, a conjugate group or a solid support material;

each R_1 and R_2 is, independently, H, a nitrogen protecting group, substituted or unsubstituted C_1-C_{10} alkyl, substituted or unsubstituted C_2-C_{10} alkenyl, substituted or unsubstituted C_2-C_{10} alkynyl, wherein said substitution is OR_3, SR_3, NH_3^+, $N(R_3)(R_4)$, guanidino or acyl where said acyl is an acid amide or an ester;

or R_1 and R_2, together, are a nitrogen protecting group or are joined in a ring structure that optionally includes an additional heteroatom selected from N and O;

or R_1, T and L, together, are a chemical functional group;

each R_3 and R_4 is, independently, H, C_1-C_{10} alkyl, a nitrogen protecting group, or R_3 and R_4, together, are a nitrogen protecting group;

or R_3 and R_4 are joined in a ring structure that optionally includes an additional heteroatom selected from N and O;

Z_4 is OX, SX, or $N(X)_2$;

each X is, independently, H, C_1-C_8 alkyl, C_1-C_8 haloalkyl, $C(=NH)N(H)R_5$, $C(=O)N(H)R_5$ or $OC(=O)N(H)R_5$;

R_5 is H or C_1-C_8 alkyl;

Z_1, Z_2 and Z_3 comprise a ring system having from about 4 to about 7 carbon atoms or having from about 3 to about 6 carbon atoms and 1 or 2 hetero atoms wherein said hetero atoms are selected from oxygen, nitrogen and sulfur and wherein said ring system is aliphatic, unsaturated aliphatic, aromatic, or saturated or unsaturated heterocyclic;

Z_5 is alkyl or haloalkyl having 1 to about 10 carbon atoms, alkenyl having 2 to about 10 carbon atoms, alkynyl having 2 to about 10 carbon atoms, aryl having 6 to about 14 carbon atoms, $N(R_1)(R_2)$ OR_1, halo, SR_1 or CN;

each q_1 is, independently, an integer from 1 to 10;

each q_2 is, independently, 0 or 1;

q_3 is 0 or an integer from 1 to 10;

q_4 is an integer from 1 to 10;

q_5 is from 0, 1 or 2; and

provided that when q_3 is 0, q_4 is greater than 1.

30. The oligomeric compound of claim 23 wherein at least one of L_1 and L_2 is a modified internucleoside linkage.

31. The oligomeric compound of claim 30 wherein at least one of L_1 and at least one of L_2 is a modified internucleoside linkage.

32. The oligomeric compound of claim 30 wherein each L_1 and L_2 is a phosphodiester internucleoside linkage.

33. The oligomeric compound of claim 30 wherein each modified internucleoside linkage is, phosphorodithioate; chiral Sp phosphorothioate; phosphoramidate; thiophosphor-

amidate; phosphonate; methylene phosphonate; phosphotriesters; thionoalkylphosphonate; thionoalkylphosphotriester; boranophosphate; boranothiophosphate; thiodiester; thionocarbamate; siloxane; carbamate; sulfamate; morpholino sulfamide; sulfonamide; sulfide; sulfonate; N,N'-dimethylhydrazine; thioformacetal; formacetal; thioketal; ketal; amine (-NH-CH_2-CH_2-); hydroxylamine; hydroxylimine; hydrazinyl; amide (-CH_2-N(JJ)-C(O)-) and (-CH_2-C(O)-N(JJ)-); oxime (-CH_2-O-N=CH-); and alkylphosphorus (-$C(JJ)_2$-P(=O)(OJJ)-$C(JJ)_2$-$C(JJ)_2$-), wherein J is hydrogen or C_1 to C_{10} alkyl.

34. The oligomeric compound of claim 30 wherein each modified internucleoside linkage is, independently, methyl phosphonate, boranophosphonate, phosphoramidate, 3'-methylenephosphonate or methylene(methylimino).

35. The oligomeric compound of claim 23 wherein at least one R_{14} is L_1 or L_2.

36. The oligomeric compound of claim 23 wherein at least one R_{14} is L_1 and at least one R_{14} is L_2.

37. The oligomeric compound of claim 23 comprising from 5 to about 50 nucleosides.

38. The oligomeric compound of claim 23 comprising from 8 to about 30 nucleosides.

39. The oligomeric compound of claim 23 comprising from 15 to about 25 nucleosides.

40. The oligomeric compound of claim 23 wherein the sum of n and p is from 2 to about 12.

41. The oligomeric compound of claim 23 wherein the sum of n and p is from 2 to about 6.

42. The oligomeric compound of claim 23 wherein the sum of n and p is from 2 to 4.

43. A pharmaceutical composition comprising a compound of claim 1 and an acceptable pharmaceutical carrier.